Health & Safety Manual

Supplement 2.05

Suspect/Counterfeit Materials

September 1995

Approved by the ES&H Working Group

_____ **date** _____

Robert W. Kuckuck

Deputy Director of Operations

Suspect/Counterfeit Materials*

Contents

* **New supplement**

1.0 Introduction

The purpose of this document is to describe the systems in place at LLNL to (1) minimize the potential for the introduction of suspect/counterfeit materials (S/CM), (2) identify any S/CM that is inadvertently placed into service, and (3) remove and isolate or approve for use any S/CM identified as in-service.

Appendix A contains a glossary of terms used in this supplement.

Mechanical fasteners (e.g., bolts) and electrical circuit breakers are the most commonly cited examples of S/CM by general industry. The DOE approved S/C Bolt Headmark List (Appendix B) provides guidance for determining if bolts are S/CM. In addition, there have been reported instances in general industry of other products, including structural steel, process chemicals, piping and flanges, and electrical/electronic components being identified as S/CM. This document describes the steps being undertaken to prevent S/CM from being introduced or unknowingly used at LLNL. These steps include

- Developing awareness of the S/CM problem.
- Implementing controls to minimize the potential for procurement or receipt of S/CM.
- Instructing appropriate personnel on how to identify S/CM.
- Assessing stock, parts inventories, facilities, and equipment assemblies for S/CM.
- Appropriate reporting of any discovered S/CM.
- Documenting disposition (leave-in-use or removal) and appropriately handling any discovered S/CM.

2.0 Requirements Summary

DOE Order 5000.3B, *Occurrence Reporting*.

DOE Order 5700.6C, *Quality Assurance*, contains requirements that are directly applicable to the prevention, identification, mitigation, and disposition of S/CM. DOE has also provided the following additional guidance on S/CM:

- *DOE Quality Alert Bulletin* (DOE/EH-0266) August, 1992, and
- DOE/EH distributed *SAFETY FLASH—Occupational Risks of Suspect/Counterfeit Parts and Material*, January 5, 1994.

3.0 Applicability

This document applies to stock items, parts inventories, facilities, and equipment assemblies that are at risk to the introduction or use of S/CM.

4.0 Processes to Minimize the Introduction of S/CM

4.1 Specifications and Procurement

Precautions are to be taken by organizations performing design, procurement, and receiving functions to minimize the potential for S/CM to be introduced into LLNL facilities and equipment. At LLNL, items may be procured either by Procurement Department buyers or directorate personnel designated as Technical Release Representatives (TRRs). After receiving specific training and information, TRRs serve as in-the-field agents for the Procurement Department.

LLNL's engineering organizations are to ensure that the procedures for specification, design, construction, modification, fabrication, inspection, acceptance, maintenance and/or operation of equipment and facilities are adequate to minimize the introduction of S/CM.

In cases in which the Procurement Department is responsible for handling a procurement action involving materials of concern, the Procurement Department is to ensure

- Quality assurance requirements are appropriately specified in subcontracts to preclude the purchase of S/CM.
- In situations involving the procurement of materials and/or products of particular concern, that a prospective supplier has in place an appropriate quality control program.
- Suppliers are appropriately monitored.
- References to national codes and standards or LLNL specifications are included, as appropriate, in subcontract documents to mitigate the possibility of receiving S/CM.
- Manufacturers assign, for appropriate products, lot numbers that can be used to maintain product traceability.
- Certified Material Test Reports are obtained from or maintained by the manufacturer for appropriate products.

In cases in which a Technical Release Representative acts as an agent for the Procurement Department, the TRR is to ensure that approved supplier lists are utilized in the procurement of materials of concern. TRRs are to contact the buyer

in the Procurement Department for assistance if there is any question as to the reliability of a supplier or materials.

Receiving organizations are to ensure

- Materials of concern are received from approved vendors.
- Specifications established in LLNL purchase orders and subcontracts are met before products are accepted.
- Items described as S/CM in DOE bulletins are considered defective without further testing.

5.0 Identification of S/CM

Field inspections for S/CM are performed to minimize the potential for the introduction of S/CM and to identify S/CM that may have inadvertently been placed in service. These inspections include:

- Plant Engineering personnel perform, as appropriate, inspections for S/CM during the construction, installation, and maintenance phases for both facility and equipment.
- Programmatic and support personnel may include S/CM on their list of things to look for during informal walk-throughs of facilities.

In addition, each directorate determines the need for formal self-assessment activities directed towards the identification of S/CM based upon the potential impact that the inadvertent introduction of S/CM would entail to particular facilities or operations. As appropriate, such assessment activities may be handled by adequately prepared directorate personnel or subject-matter experts from support or contract organizations.

Individuals who participate in inspections for S/CM or other activities directed towards the identification of S/CM are to receive appropriate training and/or information in order to perform their task efficiently and effectively. As a minimum these individuals should receive information appropriate to the commodities, facilities, and/or equipment to be inspected or assessed.

5.1 Control and Reporting of S/CM

When S/CM is discovered or otherwise identified, a risk-based approach is to be applied to determine the appropriate control, reporting, and disposition actions.

Whenever S/CM is discovered an Occurrence Report (OR) is to be prepared. The directorate Assurance Manager or the LLNL Occurrence Reporting Office should be contacted for guidance in preparing the Occurrence Report.

Removal and retention procedures for S/CM is specified in Appendix C.

5.2 Leave-in-Use Procedure

S/CM discovered in the field can be approved for leave-in-use as a result of appropriate review and analysis. In such cases the leave-in-use decision criteria are to be documented and the S/CM is to be marked so that it is easily identifiable. For example, in cases involving S/CM fasteners, orange color paint may be applied to each leave-in-use item to indicate the items have been identified, evaluated, documented, and approved for leave-in use. Other means of identifying S/CM are acceptable, provided that they are appropriately implemented and documented.

6.0 Responsibilities

6.1 Deputy Director Operations

The Deputy Director Operations or his/her designee is responsible to

- Serve as the LLNL primary interface with the DOE on S/CM policy
- Provide an independent evaluation and an assessment of the Laboratory-wide S/CM program implementation through the Assurance Review Office, the University of California self-assessment process or other audits.

6.2 Associate Director Plant Operations

The Associate Director Plant Operations or his/her designee is responsible to

- Establish a point-of-contact within PO for the purpose of collecting and maintaining information relevant to S/CM.
- Promote Laboratory-wide awareness of S/CM.
- Provide S/CM consultative support.
- Provide references for available S/CM training when requested.

6.3 Associate Directors

ADs or their designees are responsible to ensure applicable provisions of this guidance are implemented in their areas of responsibility.

6.4 Procuring and Receiving Organizations

Procuring and receiving organizations are responsible for ensuring that provisions specified in Section 4.1 of this procedure are met.

6.5 Mechanical Engineering Department

ME is responsible to ensure its designs, fabrications, assemblies, mock ups, and other equipment and materials are appropriately reviewed to prevent the introduction of S/CM.

6.6 Electronics Engineering Department

EE is responsible to ensure its designs, fabrications, assemblies, mock ups, and other equipment and materials are appropriately reviewed to prevent the introduction of S/CM.

6.7 Plant Engineering Department

PE is responsible to ensure its designs, construction projects, fabrications, assemblies, mock ups, and other equipment and materials are appropriately reviewed and/or inspected to (1) prevent the introduction of S/CM, or (2) identify S/CM that has inadvertently been placed in service.

6.8 Laboratory Employees

Laboratory employees are responsible for conducting their work in accordance with this document and applicable procedures developed within their directorate.

7.0 References

1. U.S. Department of Energy, DOE Order 5000.3B, *Occurrence Reporting.*
2. U.S. Department of Energy, DOE Order 5700.6C, *Quality Assurance,* August 21, 1991.
3. J. M. Barr Memo to Operations Offices with DP Facilities, re: Counterfeit and Substandard High Strength Fasteners, DOE/DP-22, December 19, 1990.
4. *DOE Quality Alert Bulletin*, Issue 92-4, DOE/EH-0266, August 1992.
5. *SAFETY FLASH —Occupational Risks of Suspect/Counterfeit Parts and Material,* DOE/EH, January 5, 1994.
6. *Implementing Procedures for DOE Order 5000.3B,* Lawrence Livermore National Laboratory, Livermore, CA, Revision 1.0, July 7, 1994.
7. *Quality Assurance Plan,* Lawrence Livermore National Laboratory, Livermore, CA, M-078, Revision 2, July 1994.

Appendix A

Glossary

DOE/EH	Department of Energy, Environment, Safety & Health
DOE/IG	Department of Energy, Office of the Inspector General
DUS	Donation, Utilization and Sales Group
EE	Electronics Engineering
LED	Electronics Engineering Standards
ME	Mechanical Engineering
MEL	Mechanical Engineering Standards
OR	Occurrence Report
PE	Plant Engineering
PEL	LLNL Facility Standards
PO	Plant Operations Directorate
S/C	Suspect/Counterfeit
S/CM	Suspect/Counterfeit materials

Appendix B

DOE Headmark List

ANY BOLT ON THIS LIST SHOULD BE TREATED A S DEFECTIVE WITHOUT FURTHER TESTING.

ALL GRADE 5 AND GRADE 8 FASTENERS OF FOREIGN ORIGIN WHICH DO NOT BEAR ANY MANUFACTURERS' HEADMARKS:

 **GRADE 5**  **GRADE 8**

GRADE 5 FASTENERS WITH THE FOLLOWING MANUFACTURERS' HEADMARKS:

	MARK	MANUFACTURER		MARK	MANUFACTURER
	J	Jinn Her (TW)		KS	Kosaka Kogyo (JP)

GRADE 8 FASTENERS WITH THE FOLLOWING MANUFACTURES' HEADMARKS:

	MARK	MANUFACTURER		MARK	MANUFACTURER
	A	Asahi Mfg (JP)		KS	Kosaka Kogyo (JP)
	NF	Nippon Fasteners (JP)		RT FM	Takai Ltd (JP) Fastener Co of Japan (JP)
	H	Hinomoto Metal (JP)			
	M	Minamida Sleybo (JP)		KY	Kyoei Mfg (JP)
	MS	Minato Kogyo (JP)		J	Jinn Her (TW)
	Hollow Triangle	Infasca (CA TW JP YU) (Greater than 1/2 inch dia.)			
	E	Dalai (JP)		UNV	Unytite (JP)

GRADE 8.2 FASTENERS WITH THE FOLLOWING HEADMARKS:

	MARK	MANUFACTURER
	KS	Kosaka Kogyo (JP)

GRADE A325 FASTENERS (BENNETT DENVER TARGET ONLY) WITH THE FOLLOWING HEADMARKS:

		MARK	MANUFACTURER
Type 1		A325 KS	Kosaka Kogyo (JP)
Type 2			
Type 3			

Key: CA-Canada, JP-Japan, TW-Taiwan, YU-Yugoslavia

Appendix C

Removal and Retention Procedure for Suspect/Counterfeit Material (S/CM)

When S/CM is discovered at LLNL, DOE requires the S/CM to be retained for possible use by the DOE/IG. DOE also requires an Occurrence Report (OR) to be prepared. In addition to preparing the OR, the OR originator is responsible for documenting leave-in-use decisions or removing the S/CM and sending the S/CM to Camp Parks for storage, via the Disposition, Utilization, and Storage (DUS) Group. The procedure is as follows:

1. OR originator packages the S/CM in a storage box and marks the outside of the box with "Suspect/Counterfeit Material—Retain for Possible DOE Evidence."

2. OR originator obtains Storage Request form (LL4287) from Plant Operations Assurance Office (POAO) on extension 2-9522 or 2-6903.

3. OR originator fills out "Description of Material" and "Certification" portions of Storage Request.

4. OR originator returns Storage Request to POAO (L-668).

5. POAO processes and assigns a control number and distributes green copy to DUS and remaining copies to originator.

6. OR originator attaches copies of Storage Request and LLNL Delivery Tag (LL1158-1) to outside of the S/CM storage box.

7. DUS arranges with Transportation to pick up and deliver storage box to Camp Parks.

8. DUS processes the Storage Request and returns white copy to POAO, canary copy to originator, buff copy to inside of storage box, and files the remaining copies.

9. The box is entered into long term controlled storage. A storage lot number is assigned and entered on the Storage Request and in the PRISM database.